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HORTICULTURE



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Edited under the authority of the Executive Council of the Institute.

EXAMINATIONS

Examinations for the following are conducted by the Institute:—

1. Junior Certificate in Horticulture.
2. Intermediate Certificate in Horticulture.
3. Diploma in Horticulture.
4. Seedsman's National Certificate.
5. National Certificate in Florists' Art.

Examination Papers

Sets of examination papers used at the last six examinations in horticulture are obtainable on application for sixpence per examination set.

Address all correspondence to:

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N.Z. Institute of Horticulture,

Box 1237,

Wellington.

Journal of the New Zealand Institute of Horticulture

VOL. 8.

WELLINGTON, DECEMBER, 1938.

No. 3.

OPENING OF COCKAYNE MEMORIAL GARDEN.

On the 4th November, 1938, the Cockayne Memorial Garden, in the Botanic Gardens, Christchurch, was formally opened before a large and representative gathering. The Chairman of the Domains Board, Mr. H. Kitson, welcomed the guests. The two principal speakers were Dr. F. W. Hilgendorf, President of the Canterbury Branch of the Royal Society of New Zealand and Professor Carl Skottsberg, Professor of Botany, University of Gothenberg, Sweden, and Director of the Botanical Gardens of that city. Professor Skottsberg's address was a deep and sincere tribute to the late Dr. Leonard Cockayne, and it is, therefore, placed on record in this Journal.

INTRODUCTORY ADDRESS BY DR. F. W. HILGENDORF.

It is my part to describe the genesis and purpose of this garden and to ask Professor Skottsberg formally to open it. It is a memorial to Leonard Cockayne, one of the most distinguished members of the Canterbury Branch of the Royal Society of New Zealand.

Cockayne arrived in New Zealand in 1881 at the age of twenty-six. He was a teacher at primary and secondary schools in Otago for four years and then, having obtained an income sufficient for his modest wants, he was free to follow his bent, which was to grow plants. He settled at New Brighton and started to grow native plants of all kinds. He entered into correspondence with botanical gardens abroad and obtained many new plants in exchange for New Zealand ones. He met Mr. R. M. Laing and through him other botanists, and in 1885, Mr. Laing proposed him for membership of the Society. This brought him into contact with yet more botanists, gave him access to the library and an audience to listen to and discuss his observations and a medium for publication of his papers. He recognised these benefits so deeply that many years afterwards he said to me: "Whatever I am, the Society has made me."

His method of approach to plant life was at that time new to New Zealand and at least recent in all other parts of the world. His early observations were on the changes in the forms of leaves, through which many of our plants go from their juvenile to their adult stage, and he attempted to explain these by the reaction between the plant and its environment, either during the present epoch

or during the past history of the plant race. From this time onwards his attention was focussed on the plant form as a response to environment and he became one of the most fertile of the world's authors on ecology. He had in New Zealand an almost virgin field and he explored it to its most inaccessible corners. Nearly every mountain and valley, dune, bog and wind-swept islet, was explored by him and its vegetation described, not only by botanical species but by associations and successions.

During this time he published over 170 books and papers. His reputation became world wide; he received the local honours of F.R.S.N.Z. and the Hutton and Hector Medals and he was elected the sole Honorary Member of the Society. From abroad he received the Ph.D. of Munich, the F.R.S. of England, the O.B.E. of the Empire and the Darwin and Muller Medals.

By his most extensive and critical observations of the life forms of plants and of general hybridisation, he founded or applied many hypotheses on the evolutionary process, but I think he never took these very seriously. The ordinary thinker was to Cockayne what a slow mountain climber is to a fast one. Cockayne announced a theory, other people thought about it and slowly laboured to a comprehension of it, but by that time Cockayne was off on another peak. Nevertheless, he stimulated a great deal of thought and discussion and prevented biologists in New Zealand from settling down to a dull acceptance of particular theories as if the whole evolutionary process was fixed and fully comprehended.

Cockayne to a greater degree than any other New Zealander, I think, founded a school. A large number of botanists all through our country follow his methods and carry on his work. Not from veronicas and beeches alone, but from the life and work of scores of enthusiastic young botanists, he wove for himself an immortal crown.

When he died, four years ago, the Canterbury Branch of the Royal Society of New Zealand considered what steps it should take to honour his memory. Research grants and the like were proposed, but it was felt that a garden would be the memorial he would most have appreciated. The Christchurch Domain Board was approached, plans were approved, and this garden finally designed and laid out. As an elected body the Board represented the feeling of all the people of Christchurch and its neighbourhood, who contribute to the upkeep of this garden, and we feel that they are all behind us to-day in honouring the memory of one of our greatest botanists. Two names stand out clearly as the leaders of the thought and action that finds its fulfilment to-day. They are those of Dr. O. H. Frankel who first made the suggestion, elaborated its details and has largely fixed the character of the garden; and of Mr. J. A. McPherson who has with boundless enthusiasm carried out the details of planning beds and borders, artificial river beds and scree slopes.

The aim of the garden is to provide material for the study of variation and evolution in New Zealand plants. It consists at present of two parts—first, a collection of nearly all the varieties of the genus *hebe* in New Zealand and some hundreds of the crosses between them; and secondly, a garden where alpine conditions are closely imitated, so that the forms of the plants growing in this environment may be studied. It is a student's garden. To the collection of the genus *hebe* other genera will in the course of time be added, the plan being to make a complete collection of each genus before another is begun.

It now only remains for me to ask Professor Skottsberg to speak on the estimate in which Cockayne's work was held in Europe and to request him to declare the garden open.

OPENING CEREMONY BY PROFESSOR CARL SKOTTSBERG.

You have honoured me greatly by asking me to speak on this occasion and to open this garden. Nothing could have made me happier than to have this opportunity of paying a tribute to the memory of Dr. Leonard Cockayne, the more so as I know I can speak for his fellow-workers and friends in many countries. I never met him, but, nevertheless, we knew each other and we became friends across the oceans. Much of my earlier work in the field was done in the part of the world, where South America extends to meet the chain of Antarctic islands, that link it to the big frozen continent, and when I told my story, there was nobody who listened more eagerly or with greater sympathy than did Cockayne. He wrote to me, full of enthusiasm; he praised and he criticised; and thus began a correspondence and an exchange of facts and views, to me a source of delightful stimulation, which flowed generously until his death. In his letters he became known to me, not only as a great scientist, but also as a remarkable and noble personality. Again and again he asked me to come and work with him for a while; he told me that a botanist, who had devoted himself to a study of the beech forests and bogs of one of the two dependencies of Antarctica, must see also the other, so as to be able to appreciate to its full measure this wonderful two-fold expression of old Antarctic life. He was right, and I knew it, but other duties forced me to stay away, and when at last I was able to come, he was no more. But I have met those who knew him and loved him, men and women whom he guided and taught to look deep into the heart of Nature, to approach it as worshippers and still in the true spirit of explorers and conquerors—his spirit—and in them it lives.

Leonard Cockayne was not what we might call a local botanist, for, even if his influence was felt with all its immediate strength here in New Zealand, it reached very far. What Cockayne means to New Zealand botany and horticulture cannot, I am afraid, be adequately expressed in few words, because his activities were so manifold and so wide-ranging, but I shall venture to emphasise one side which is, in my opinion, of supreme importance. In these young



Professor Carl Skottsberg planting a tree in the Cockayne Memorial Garden, Christchurch, on 4th November, 1938. Dr. F. W. Hilgendorf is standing by.

dominions beyond the seas, created by a marvellously enterprising nation, the greatest modern history has known, science has, in the beginning and as a rule for a considerable length of time, been, as it were, administered from the mother country, and travellers from many lands have come to harvest and have returned laden with Nature's treasures, whereas few have stayed to become faithful servants to the new country. I believe this is a fairly true picture of what happened here. Cockayne was one of those who shifted the management of New Zealand botany from the old countries over to New Zealand itself, and he became the man, who definitely made it a national science. To him, botany did not mean simply listing species and tagging Latin names to them. He went to the living thing; he introduced modern plant ecology; the science of the plant in relation to its surroundings, past and present, into New Zealand, not to become an inanimate copy of other people's views, forced upon a new and strange world, but as an original structure, enriched and flavoured by his masterly mind. This work of his made him famous here and naturally so, and we, who work in other countries, soon came to look upon him not only as the outstanding figure in New Zealand botany, but also as a master whose influence on the progress in ecology, was felt far and wide. Thus he took his seat among the leaders in international science. This is how we regarded him and why we wanted to honour him. In my country, ecology has long been a favourite subject for research, and I was proud when it fell to me to sign the document that made him a foreign member of the Royal Society of Gothenburg.

It is easy to say that outward signs of appreciation mean little in Cockayne's case, or that nobody could erect a memorial more worthy of him than the one he built himself, a monumentum aere perennius and a great gift to his nation, "The Vegetation of New Zealand." Be this ever so true, we want the monuments, to show the world how much we admire his genius, to express our gratitude, to satisfy ourselves. And could there be anything more appropriate to perpetuate Cockayne's name and life-work than a garden? We all know his outstanding services to gardening, his ardent desire to spread the knowledge of plants in wide circles. A few days ago I went to the Otari gardens, where his spirit still directs the work and where his presence is intensely felt, for there he lies where he longed to be. He inspired others with his enthusiasm for native flowers in New Zealand gardens. And such is the lovely place where we have met to-day, here they shall thrive and blossom, tenderly raised by skilful hands, some vigorous, overflowing with life, gay with colour, some modest, almost shy, but beautiful all, the pride and glory of New Zealand's lofty mountains—the flowers he loved so dearly, the flowers that loved him and told him their secrets. Let this sanctuary be known for ever as Cockayne Memorial Garden, a precious gift to the people of Christchurch. May it win a place in your hearts and fill them with his love for the flowering wealth Nature so lavishly bestowed on this blessed soil.

With these words I declare the Cockayne Memorial Garden opened to the public.

GARDEN PESTS AND FERTILISERS.

(By M. L. Glyde).

MILDEW.

Mildew is the greatest enemy of plant life in New Zealand. An introduced pest, it flourishes in the humid atmosphere of this country. In the first instance, it is an off-set of the greenish-grey seaweed-like lichen that gathers round drains and damp corners, and gives off an unpleasant odour. The spores which settle on plants are unfortunately invisible, but may be detected by their effects. If a picked up handful of soil smells mouldy, or a mouldy smell arises after watering, or plants droop in sun or wind though the soil be damp, it is a sure sign of mildew. While it thrives most in damp or sheltered situations, it also attacks all bulbs and surface-rooting or soft-foliaged plants. The results are weak plants, dropped buds, small flowers and sickly colours. First the leaves turn yellow, as with Hydrangeas and Fuchsias, or become frosted over with white, as with Sweet Peas and Roses. Before treatment, all these should be cut off. The best preventive is to keep a free passage of air through the bushes, by continually thinning out the central growth and over-crowded leaves and laterals, as with Dahlias, Cinerarias and Carnations, also stripping off all leaves and laterals for about a foot above ground, of Lilliums and Sweet Peas.

Of all the advertised or recommended remedies, these are generally found ineffective, or the cure is worse than the disease. The writer discovered that quicklime is the only safe and satisfactory remedy for dusting foliage. The much-vaunted sulphur is costly, needs continual crushing, does not adhere to the foliage, and is not dissolvable in water (only milk). The only use for it seems to be sprinkling in the loosened-up soil round pot-plants or in the greenhouse. Quicklime is very cheap, as it goes such a long way, is quickly and easily thrown on or sprinkled by hand, adheres to the foliage, rises and gets underneath, will not harm the most delicate growth, and acts as a fertiliser when washed off. It is only necessary to do this in the greenhouse or on pot-plants, after leaving on for 24 hours. Soot sprinkled over the surface of the soil, in the greenhouse or damp corners, will also keep mildew down. After heavy rain, it will prevent mildew if sprinkled dry around the roots of Sweet Peas, Carnations, Perennial Phlox and Delphiniums.

For root treatment of mildew, the only safe and effective cure is bluestone, always remembering that it is fatal to stems or foliage. As it will corrode all metal containers, it is necessary to mix it either in an earthenware bread-crock, or a heavy white lead or putty drum. Allow a large tablespoonful of the crystals to half a gallon of boiling water, stirred up occasionally and allowed to stand about 20 minutes, then filled up with another 1½ gallons of cold water, for the stock solution. This can then be ladled out into a bucket for carrying about. If the bucket is first tarred or painted inside, it will

last a couple of seasons. As there is no suitable ladle on the market, the best substitute is a small aluminium saucepan, which can be bent boat-shaped, bow facing handle. The spray can then be dipped from the bucket and applied precisely around the roots without danger to stems or foliage, and poured down cracks and corners, etc. Do not use after the plants have started to die off in the autumn.

SLUGS AND SNAILS.

More imported pests, these are specially dangerous in the early spring. The best safeguard is to grow fodder for them to go on with during the winter, so that they may leave the plants alone. Field mustard and the wild parsnip are most effective, and provide useful humus afterwards. Broadcast the seed in the autumn in clumps on each bed, or as light hedges along borders or fences. Snails will oblige by crawling up these forage plants for their daytime nap, whence they may be easily seen and gathered up. The foliage of the wild parsnip when half wilted is much relished by both snails and slugs, so if laid around seedlings when planting out, they will consume this in preference. The foliage is also useful as a greenery base in vases. If attacked by hordes of these pests, especially slugs, which hide in the daytime down cracks in the soil and under clods, the only way to clear them out quickly is to go out about an hour after dark with a lantern. Here the bluestone ladle will again come in, filled with the useful quicklime. As it only takes a few grains for each victim, a half-pint ladle will do two or three hundred, lightly tapped on to them. These marauders are cunning enough to haul in their slime depositors before retiring to their dens, so that you may not track them. It is useful, therefore, to detect these by laying traps. Always remembering that they like their sleeping bags damp, dark and heavy overhead, with particular preference for snug blocked corners, pieces of overlapped board to form a dead end, with half a wet sack thrown over, prove most attractive. Wood-lice will also seek such shelters, half rotted boards being preferred. These pests can then be destroyed in daylight, pouring boiling water over them—from a kettle being the best for wood-lice. Another most effective decoy trap for wood-lice is to lay down leafy branches of Manuka, which may be used over and over again until the leaves have dropped off. Every day the pests will be found underneath, until eradicated. Heaps of inverted oyster-shells, if overlaid with wild parsnip or mustard leaves for their larder, will also trap both wood-lice and snails.

Going out at night with a lantern will often reveal other unsuspected marauders, such as the night-raiding caterpillar and cockchafer. These can be best cut in half with scissors, which also applies to slugs and snails in the daytime. As they are all cannibals, they will come back the next night to feed on the carcasses of their departed comrades, so can be conveniently tracked. The writer has found the much-recommended soot quite useless for protecting seedlings from slugs, as it will only turn them back at the best, to attack something else. Unless poured over them, it does not kill them.

APHIDES, ETC.

On Roses and Dahlias, aphides etc. can best be crushed by gently rolling the stalks and buds between the gloved fingers. For Fuchsias, Cinerarias, Hydrangeas and Ferns, use Black-Leaf 40 in a mist spray carrying container. Put a teaspoonful of washing soda in a pint can, and half fill with boiling water. This takes the place of the oft-recommended soft-soap, which will clog the spray at once. Add a large teaspoonful or capful of Black-Leaf 40 and fill up the can with cold water, shaking it up well to mix thoroughly. This will not hurt the most tender plants or buds, but may stain fully-opened flowers. It must be remembered that the aphides require wetting all over, so go all round the plant to make it effective.

OTHER PESTS.

The brown elephant moth, that attacks Cinerarias, can easily be caught on the wing, but the only effective way to deal with the eggs is to turn over the leaves and scrape them off. The caterpillars themselves, "woolly bears", must be gathered by hand. It is impossible to spray under the leaves properly, and the recommended Arsenate of Lead quickly clogs and ruins any spray pump.

The White Butterfly is a much more difficult subject. Its flight is so erratic that it is practically impossible to catch it on the wing, and it lays its eggs in such inaccessible places, such as under a calyx or leaf-joint, that the best thing to do is to wait till the grubs hatch, and then go round the plants day by day, watching for curled leaves or cobwebbed calyxes. The little Australian Greenie, "Wax-eye," is most useful for catching these grubs, so every garden-lover should keep a bread-tray nailed on a post, for them, protected from starlings and sparrows by a hood of 1½ in. wire netting, with a few holes on the top slightly enlarged by stretching.

Thrushes are the best enemy of earthworms, so these birds should also be fed in between-times, especially the newly-fledged ones, which are much like sparrows, only darker, somewhat mottled, and with blacker eyes. They like bits of cooked cut-up suet or fat, also soaked bread, and always come out after rain or watering, in search of worms, also after any digging-up, so that is the time to lay their food, or the starlings and sparrows will get away with it. Any strong acid will kill earthworms, such as slightly diluted sulphuric, which is best shaken over them from a bottle fitted with cork sprinkler, as the acid will corrode any metal pump.

Stopping up the holes of rats is wonderfully effective in keeping them out. They seldom or never make a fresh hole, evidently thinking the barriers mean that something is after them. Driving a bit of stick down a spider's hole, usually has the same effect. Cats can be kept out by nailing a bit of wobbly wire netting to project above and alongside the posts they scramble over.

FROST.

Damage by frost can always be prevented by the simple precaution of laying a mulch of grass, leaves or branches over newly-

planted seedlings, or banking the same snugly round tender things. Clumps or rows as light breakwinds, of the field mustard planted in the autumn, will give all the protection needed against frosts in the spring, as frost will not go within six inches of any higher growth. This useful plant also forms an effective trap for aphid and black scale, which attack the flower heads. These can then be picked off and crushed underfoot.

When protection from frost cannot be had as above, tender things can be saved by merely sticking a folded newspaper through the stake the plant is tied to, as there is no wind when there is a frost. The same safeguard can be used when planting out something too big, or in a drying wind. The newspaper must then be tied down over the plant for two or three days, the plant being watered through it. This will keep the foliage going till it can settle its roots. Then remove all old or wilted growth, and that will give the plant a good start in its new home. But it is not good to do this when actually transplanting, as the plant cannot look after its top and its roots at the same time, and may die by bleeding. If accidentally cut, pack up the place at once with quicklime. Except for well below its roots, at least two inches covered by fine soil, it is a mistake to give any fertiliser to a transplanting until it has got well settled, usually a couple of weeks.

FERTILISERS.

Of all artificial fertilisers, the best is undoubtedly blood-and-bone, alternated or mixed with sulphate or muriate of potash and sulphate of ammonia. But the next important point is to purchase it in the original 1½-cwt. sacks, as in the small bags sold by the shops it is usually so deteriorated that it might be a totally different article. Its goodness may have been eaten out by moths, grubs, rats and mice, or perished through exposure to damp or the air. At the same time, it will keep quite well from one season to the next, if what is left over is transferred to tins or boxes and kept well covered in a dry shed. Use in the proportion of a teaspoonful to a small plant, dessertspoonful to a big one. Give doses every fortnight or so during the growing and flowering season, but not when the plant has begun to go off, or it may cause rotting. These doses should be worked on the method of:—First time, in front, second, behind, third, right side and, fourth, left side, of the plant, to ensure evenness of nutrition and to avoid over-doses. They are best put down by making a cleft with a trowel, worked backwards and forwards, then put in the fertiliser and cleft back the hole, or tread it back. It is useless if left on the surface, as it cannot dissolve when dry, so that the roots will never get it. Broadcasting is wasteful, and may kill plants if applied after digging, when the roots have possibly been disturbed. Two or three inches from the central stem should be allowed.

ACCESSORIES.

Garden gloves of grey pigskin are most satisfactory. They are not clumsy like the cotton or leather makes, and are very long-wearing. They should be frequently oiled to retain pliability, by brushing over with oil while on and then rubbing the hands together. The best all-round oil for this and other garden purposes, is a cheap fish lubricating oil. It is equally good for cleaning the blades and handles of tools and will remove rust.

Flat-heeled canvas tennis boots are the best for gardening. They need only be laced as far as for shoes, so as to be slipped on and off easily. They are cheap, long wearing, and do not pick up mud or damage grass paths like leather boots, and give a better grip for climbing about.

For forking up among growing plants or loosening weeds, the best tool to avoid damaging the roots, is a lady's size foot-fork and have the left prong removed by the shop, leaving three prongs in all. This is just a nice size to work without fear of injury. By giving a stab in the ground and then twisting to the left, the soil is loosened up quickly and safely.

The life of a hose may be doubled by binding, directly a bulge appears. This may either be done with white string or fishing twine, bound tightly putte-wise. To stop a leak at a metal connection, bind over with a penny reel of narrow tape.

LODER CUP COMPETITION, 1938.

The Loder Cup, which was presented as a challenge cup in 1926 by the late Gerald W. Loder (afterwards Lord Wakehurst) to the lovers of Nature in New Zealand, has been awarded, in respect of the competition for the year ended 30th November, 1938, to Mrs. Knox Gilmer. It is undoubtedly a just award, as there can surely be no greater lover and friend of Nature in New Zealand than Mrs. Gilmer. She was nominated by the New Zealand Institute of Horticulture, the Forest and Bird Protection Society of New Zealand, and the Wellington Horticultural Society.

The revival of Arbor Day, after nearly twenty years, was mainly due to her efforts, and she has been outstanding since in keeping the interest in this day alive throughout New Zealand. This year, in addition to arranging the main planting ceremony carried out by the Wellington Beautifying Society in conjunction with the Wellington Horticultural Society, and assisting in the plantings at the Wellington Girls' College, the Wellington East Girls' College, and the Wellington South School, Mrs. Gilmer has given many addresses to colleges, schools, and women's organisations, as well as broadcast talks, which have always featured the cultivation and preservation of our native flora.

Following on the passing of the Native Plants Protection Act, 1934, which was due mainly to her efforts, Mrs. Gilmer has at all times urged its proper administration, and continues to do so.

The New Zealand Institute of Horticulture, whose activities include native forest preservation, has found Mrs. Gilmer a most energetic and useful member of its executive council, and on its recommendation, she was appointed an honorary inspector under the Scenery Preservation Act.

As a member of the horticultural committee of the New Zealand Centennial Exhibition, she has interested herself in the planting of native shrubs and trees in the grounds.

On her recent tour overseas, Mrs. Gilmer acted as an ambassador, on behalf of our native flora, in the United Kingdom, Europe, and the United States of America. At the Chelsea Show many visitors were enlightened regarding the New Zealand native flora exhibit.

Mrs. Gilmer is a member of the executive of the Forest and Bird Protection Society of New Zealand, and is most active in assisting this society's good work, and as working patron of the Wellington Beautifying Society, she has consistently advocated the planting, cultivation, and preservation of natives, and the results in the city and surrounding districts as far as Paraparaumu, speak for themselves. Approximately, 40,000 trees, mainly natives, were planted during the recent season. Her own garden at Te Marua, Upper Hutt, was awarded Viscount Bledisloe's Challenge Trophy as showing the best and most attractive use of New Zealand plants.

Altogether her work for and interest in our native flora have been thoroughly national in their scope and have well earned the award.



JAMES ANGUS CAMPBELL.

JAMES ANGUS CAMPBELL.

The Dominion Executive of the New Zealand Institute of Horticulture has placed on record its deep sense of the momentous loss sustained by our National Horticulture through the passing, on the 24th September, of James Angus Campbell, N.D.H. (N.Z.), Director of the Horticulture Division of the Department of Agriculture.

Through a long connection with the Division as Orchard Instructor, Assistant Director, and finally as its head, Mr. Campbell came into personal contact with every phase of horticulture and has left, in all directions, the impress of his knowledge, technical ability, executive powers and outstanding personal character.

The Institute has been extremely fortunate in having had Mr. Campbell's keenest interest from its inception, as he was a prime mover in its initiation and was always regarded as its foster parent. During the late Mr. F. J. Nathan's long term as President, he acted as Deputy Chairman of the Dominion Executive Council for many years and was always accessible with valuable advice regarding the various activities of the Institute.

One of the most active members of the Examining Board, his assistance was invaluable in the preliminary work of drafting the Act, the original scheme of examinations, and relative regulations; also students' requirements for the theoretical and practical work; advising the standing of applicants for examination and of the gardens in which they were employed, and dealing generally with questions arising from the syllabus and its extension to branches of horticulture other than gardening.

One of the originators of the movement for the initiation of National Horticultural week and the association 'herein of the various national horticultural bodies, he was always an outstanding personality at the Annual Conferences, during that week, of the Institute and of the New Zealand Horticultural Trades Association. He was the Institute's continuous representative on and Chairman of the Joint Committee charged with the arrangements for National Horticultural Week including the National Flower Show.

"Jim" Campbell's charming personality endeared him to all. His sound judgment and tact were well exemplified in his conduct of meetings, which were always put through efficiently and expeditiously. A clear thinker, a knowledgeable and fluent speaker, he would marshal all the facts, smooth over all the difficulties, and present a solution acceptable to all parties.

The following resolution was adopted at a recent meeting of the Dominion Executive Council of this Institute:—

"That a suitable memorial to Mr. J. A. Campbell be arranged, and that subscriptions be invited from all members of the Institute and its affiliated bodies."

It will not, of course, be possible to arrange the form of memorial until some idea of the amount available, from affiliated societies and also from their members, has been ascertained.

Condolence has been conveyed to the widow and family in the

form that the loss is a personal one to all of the Institute's members and a quotation from an ex-member of the Executive Council and of its Examining Board:—"If there was one man who carried the burden of the foundation of the Institute, it was J. A. Campbell."

MANAWATU NURSERY EMPLOYEES' GUILD.

Mr. F. J. Melhuish, 172 Church Street, Palmerston North, Honorary Secretary, recently advised the formation of the Manawatu Nursery Employees' Guild and, as it is desired by his Guild that similar guilds should operate throughout the Dominion, he will be pleased to supply full information on application.

It was mentioned at the meeting that horticulture, in the estimation of the general public, was not properly regarded as a profession requiring a vast amount of knowledge and skill and it was, therefore, necessary to move whole-heartedly in this and other directions for the advancement of horticulture and its employees.

The main objects of the Guild are stated to be:—

1. The arrangement of periodic lectures and demonstrations, by qualified persons, for the advancement of the theoretical and practical knowledge of members.

2. The encouragement and stimulation of mutual understanding between employers and employees.

NOTE.—Employers may, on application, enrol as honorary members and attend meetings, lectures and demonstrations. They may enter into discussions and put forward proposals with no right to vote.

3. The institution of a nursery employees' labour bureau, whereat employers can apply for full-time or seasonal employees and vice versa. Applicant employees will require to give particulars of their qualifications. No fee will be charged to financial members.

4. The encouragement of horticulture, in any form possible, and the endeavour to supply horticultural speakers to any organisation or body seeking such.

5. Application to the New Zealand Institute of Horticulture for specialised examination papers, other than those set for the Diploma in Horticulture.

6. The listing of general gardeners for recommendation to private persons.

It is mentioned that the annual subscription to members (nursery employees) is two shillings and sixpence, payable in advance; it is proposed to discuss the issue of identification badges later and also the classification of nurseries.

REPORT OF THE EXECUTIVE COUNCIL FOR THE YEAR ENDED 30th SEPTEMBER, 1938.

It is pleasing to record that, although the membership was maintained at about the same level, the subscriptions paid during the past financial year showed an increase of £42.

EDUCATION:—The report of the Examining Board fully sets out the position in this direction. The members of the Board, its examiners and other voluntary workers have, by their fine work, placed the Institute and horticulture generally under a deep debt of gratitude.

JOURNAL:—The Executive once again extends thanks to the Editor of the Journal (Dr. W. R. B. Oliver) and to Dr. H. H. Allan, who acted as Editor during the former's absence overseas. The standard of the Journal has been well maintained and several commendatory letters have been received, particularly in respect of the Cockayne Memorial Number, which was originated by Dr. Allan.

SCHOOL OF HORTICULTURE:—On the suggestion of the Examining Board, a deputation from the Executive, with representatives of its Canterbury District Council, waited upon the Prime Minister (The Rt. Hon. M. J. Savage), on the 25th November, 1937, to urge the establishment of a School of Horticulture at Christchurch. The deputation was accorded a sympathetic hearing but, as nothing further had then been advised, a resolution from the 1938 Conference was conveyed to the Prime Minister requesting that the necessary financial provision should be made in the 1938-1939 Estimates. A reply was received that the representations were still under consideration and that the Prime Minister would be pleased to do his best to expedite a decision.

COCKAYNE GOLD MEDAL:—Mr. F. J. E. Jollie, employed by Messrs. Duncan and Davies, New Plymouth, was awarded the Cockayne Gold Medal as the best student in the Diploma Examination for 1938.

NATIONAL CONFERENCE ON HORTICULTURE:—The eighth National Conference on Horticulture was held at Christchurch in January, 1938, when the annual meetings of the Institute, the New Zealand Horticultural Trades Association, the Horticultural Seedsmen's Association of New Zealand, and the Association of Parks and Reserves Superintendents, were held. The delegates were given a civic welcome, combined with the official opening of the National Conference and Flower Show, by the Hon. Sir R. Heaton Rhodes. The Show was an outstanding display, well attended, and showed a satisfactory profit. The Annual Meetings of the bodies previously mentioned followed after the first day of the Show and all delegates, including the ladies, participated in many pleasant outings and social functions.

BANKS LECTURE:—Dr. O. H. Frankel, Geneticist, of the Wheat Research Institute, Christchurch, delivered the Banks Lecture, his subject being "The Evolution of Cultivated Plants." The lecture was most interesting and instructive, but the attendance was disappointing.

CONGRATULATIONS:—The hearty congratulations of the Institute have been extended to Mr. W. S. La Trobe, a former member of the Examining Board, on his Honour of C.B.E., and to Mr. J. W. Mawson, Internal Affairs Department, on his election as a Fellow of the Institute of Landscape Architects.

CONDOLENCE:—The Institute has conveyed its sympathy to the relatives of Sir Algernon P. W. Thomas, Auckland, and J. F. Bailey, Brisbane, Honorary Fellow (N.Z.), and Honorary Overseas Member; F. J. Nathan, Palmerston North, President of the Institute for about twelve years, and J. A. Campbell, Director of the Horticulture Division, Department of Agriculture, one of the founders and principal workers of the Institute and a valuable member of the Executive since its inception.

FINANCE:—The renewal of the Government grant of £100 is again appreciated, as otherwise the excess of income over expenditure, viz., £40/19/2, would not have been possible.

REPORT OF THE EXAMINING BOARD FOR THE YEAR ENDED 30th SEPTEMBER, 1938.

BOARD MEMBERS:—The death of Mr. J. A. Campbell is a severe blow to the Board, as he was a foundation member with specialised knowledge and the keenest interest in the examination scheme. Mr. H. Baillie's resignation deprives the Board of a most useful member, whose service also dates from the initiation of the scheme. Mr. W. S. La Trobe was the Education Department's representative on the Board, who resigned on his retirement from the Service. His wide experience of examinations and of matters pertaining thereto, made him a most valuable member. Mr. F. C. Renyard, Superintendent of Technical Education, has taken Mr. La Trobe's place on the Board.

SYLLABUS:—The Syllabus has been amended by the inclusion of a special requirement of a knowledge of plants indigenous to New Zealand, and a more definite statement regarding the practical general horticultural training desired in the case of University Graduates.

EXAMINERS:—Consequent upon the creation of new examination centres at New Plymouth and Hastings, Messrs. T. Horton, C. W. Corner, and J. G. C. Mackenzie were appointed Examiners, and Mr G. A. Aggett for Wellington. Each of these holds the Institute's Diploma in Horticulture.

APPOINTMENTS:—The Board has noted, with gratification, that Mr. G. H. Huthnance from "Maranui," New Plymouth, has been appointed first assistant at Pukekura Park and Brooklands, that Mr. I. C. R. Harvey has been appointed propagator at Christchurch Botanic Gardens, and Mr. E. W. Campbell, of the Reserves Department, Invercargill, has received an appointment under the London County Council Parks Department.

SCHOOL OF HORTICULTURE:—Upon the Board's suggestion to the Executive Council, a deputation, with Canterbury District Council representation, waited on the Prime Minister on the 25th November, 1937, to urge the establishment of a School of Horticulture at Christchurch. As the Minister gave the deputation a most encouraging reception, it is disappointing to have to record that nothing definite has yet resulted, and that in consequence the matter remains in statu quo.

EDUCATION DEPARTMENT'S SUBJECTS:—It is noted with gratification that the Education Department's Correspondence School is prepared to give tuition in Chemistry and Agriculture to students who lack facilities for attendance at such classes at Technical Schools.

INDUSTRIAL AWARDS:—It is gratifying to note that the value of the Institute's Diploma in Horticulture and Certificates has been recognised in various Industrial Awards.

THANKS:—The Board again records its thanks to all examiners who prepared the written tests and marked the examination papers; to those who conducted the oral and practical tests, especially those who, at the several centres, acted as conveners of the panels of examiners; those who gave voluntary instruction to trainees at the various centres by coaching and lectures, etc.; and also to those who gave help as supervisors during the examinations.

EXAMINATIONS:—The number of candidates for the November 1937 Examination, was 22. The following is a summary of the results:—

Examination.	Complete Pass.	Partial Pass.	Failure.
Junior	3	4	3
Intermediate	4	2	—
Diploma	3	3	—

DIPLOMAS AND CERTIFICATES:—List of Diplomas and Certificates granted under Section 4 of the New Zealand Institute of Horticulture Act, 1927, since the issue of the 1936-1937 Annual Report:—

DIPLOMA IN HORTICULTURE.

Jollie, Francis John Edward; New Plymouth.
Nodder, Cyril Robert; Auckland.
Skipworth, Maurice Raymond; Dunedin.

INTERMEDIATE CERTIFICATE IN HORTICULTURE.

Mackenzie, Dugald Carr; Christchurch.

Morgan, Alan Frederick; Timaru.
 Silvester, Arthur John; Bulls.
 Treleaven, Lawrance; Christchurch.

JUNIOR CERTIFICATE IN HORTICULTURE.

Barnett, Morris George Edward; Christchurch.
 Denny, Miss Joan E.; Dunedin.
 Godwin, John William; Christchurch.
 Harvey, Ivor Charles Ross; Christchurch.
 Heseltine, Alan; New Plymouth.
 Mashlan, John Anton; Christchurch.
 Tannock, James Lindsay McCall; Dunedin.

TOTALS ISSUED TO DATE.

Diploma: Without Examination	170
Group C Examination	32
Group B Examination	18
Equivalent	1
Certificates: Junior	39
Intermediate	30
Fruit-culture	1
Florists	54
Seedsman	18
	<hr/>
	363

W. K. DALLAS.



Mr. William Kerr Dallas, N.D.H. (N.Z.), was recently appointed Director of the Horticulture Division of the Department of Agriculture, in succession to the late Mr. J. A. Campbell.

During the past three years, Mr. Dallas has been closely associated with the late Mr. J. A. Campbell as Acting Director of the Horticulture Division.

Mr. Dallas has always taken the keenest interest in the activities of this Institute. While stationed at Dunedin, he acted as Secretary of its Otago District Council and, on his transfer to Wellington, he became a member of its Dominion Executive Council. In addition to being an examiner for the oral and practical tests in connection with the horticultural examinations conducted by the Institute's Examining Board, he has taken a seat on the Board as Director of the Horticulture Division.

INSTITUTE NOTES.

PERSONAL:—Since last issue, the following members of the Executive Council have returned from overseas viz.: Dr. W. R. B. Oliver and Messrs. T. Waugh and W. S. Mason. We are very pleased to welcome them and to have their services again.

SOCIETY REPRESENTATION:—Messrs. Hope B. Gibbons and T. A. N. Johnson, both of Wellington, have been accepted as the representatives on the Executive Council of the New Zealand Rock and Alpine Society and of the Dahlia Society of New Zealand respectively. Mr. M. J. Barnett, of Christchurch, is the Institute's representative on the latter Society's Executive.

EDITORSHIP:—Dr. W. R. B. Oliver, on account of pressure of official work, has resigned his Honorary Editorship of the Journal and has been accorded a hearty vote of thanks by the Executive Council for his valued services in that capacity. Dr. H. H. Allan, who acted during Dr. Oliver's absence overseas, has agreed to take over the Honorary Editorship.

ANNUAL EXAMINATION:—The number of candidates for the Institute's Annual Examination on the 17th November last was again a record. The examination was held at eight centres and twenty-nine candidates sat as follows:—Junior Certificate, 11; Intermediate Certificate, 6 and Diploma, 12.

DISTRICT COUNCILS:—Auckland—It is pleasing to hear that Mr. W. H. Rice has accepted the Chairmanship of the Auckland District Council. TARANAKI—Gratification was recently expressed with the continued excellent work of this district. CANTERBURY—The Chairman's report shows a sound position with good educational work.

SOUTHLAND:—Mr. G. M. Broughton, former Secretary, has been appointed Chairman of the Southland Progress League and Mr. B. P. Mansfield, present Secretary, President of the Southland Boys' and Girls' Clubs Association for the third successive term. Educational work is being well carried out.

NATIONAL HORTICULTURAL WEEK, 1939:—All reports from New Plymouth indicate wonderful staff work with the best of arrangements and anticipation of a bumper crowd for an outstanding and original National Flower Show.

Statement of Receipts and Payments for the year ended 30th September, 1938.

RECEIPTS.				PAYMENTS.			
	£	s.	d.	£	s.	d.	
To Post Office Savings Bank				340	1	6	
„ Subscriptions.—							
Individual Current ..	125	3	3				
Individual Arrears ..	33	2	6				
Affil. Societies Current	45	11	6				
Affil. Societies Arrears	1	13	6				
				205	10	9	
„ Examination Fees ..				54	12	0	
„ Exchange				1	5	0	
„ Donations				2	1	0	
„ F. Cooper, Ltd., Trust							
Donation				115	10	0	
„ National Flower Show,							
Christchurch				21	15	10	
„ Office Furniture ..				2	10	0	
„ Publications (including							
donation of £10 towards							
cost of Cockayne Me-							
morial Number of							
Journal)				11	1	6	
„ Government Grant ..				100	0	0	
„ Post Office Savings Bank,							
Interest				10	10	2	
				£864	17	9	
By Balance Bank of New							
Zealand							4 16 7
„ Salary, Dominion Sec-							
retary							141 0 0
„ Capitation Fees (Dis-							
trict Councils).							
Taranaki				6	0	0	
Canterbury				3	6	3	
Southland				3	18	9	
							13 5 0
„ Conference Expenses ..							14 2 0
„ Publications—Journal							64 6 0
„ Travelling Expenses, Do-							
minion Secretary ..							5 7 6
„ Examination Expenses ..							1 19 6
„ Cockayne Gold Medal ..							1 10 0
„ Wreaths							3 3 0
„ Canterbury District							
Council (share Na-							
tional Flower Show,							
1938)							5 12 0
„ National Flower Show,							
1938							5 0 0
„ National Flower Show,							
1939							5 0 0
„ Office Expenses.—							
Cleaning				5	9	6	
Exchange				1	19	9	
Postages				23	7	1	
Printing and Sta-							
ticnery				16	2	2	
Rent and Light ..				34	6	0	
Sundries				6	0	1	
							67 4 7
„ Government Stock at cost							
(F. Cooper, Ltd.							
Trust)							100 17 6
„ Post Office Savings Bank							365 4 2
„ Bank of New Zealand ..							46 9 11
							£864 17 9

Income and Expenditure Account for year ended 30th September, 1933.

	£	s.	d.	£	s.	d.		£	s.	d.	£	s.	d.
To Conference Expenses ..	14	2	0										
„ Conference Travelling Expenses	5	1	0										
				19	3	0							
„ Capitation Fees.—													
Taranaki	9	13	2										
Canterbury	5	2	6										
Southland	4	10	0										
				19	5	8							
„ Dominion Secretary's Salary				141	0	0							
„ Publications				56	2	4							
„ Depreciation				2	0	0							
„ Cockayne Memorial Medal				1	10	0							
„ Examination Expenses ..				1	19	6							
„ Office Expenses.—													
Rent and Light	34	6	0										
Cleaning	5	9	6										
Printing and Stationery	17	11	9										
Postages	21	17	6										
Exchange	0	14	3										
Bank Charges	0	14	2										
Insurance	0	12	11										
Wreaths	6	6	0										
Sundries	5	0	0										
				92	12	1							
Excess of Income over Expenditure				40	19	2							
				£374	11	9					£374	11	9

	£	s.	d.	£	s.	d.
By Subscriptions.—						
Individual Current	121	18	3			
Individual Arrears	33	2	6			
				155	0	9
Affiliation Fees.—						
Current	44	10	6			
Arrears	1	13	6			
				46	4	0
„ Examination Fees				54	12	0
„ Government Grant				100	0	0
„ National Show, Christchurch				6	3	10
„ Donations				2	1	0
„ Interest, Post Office Savings Bank				10	10	2

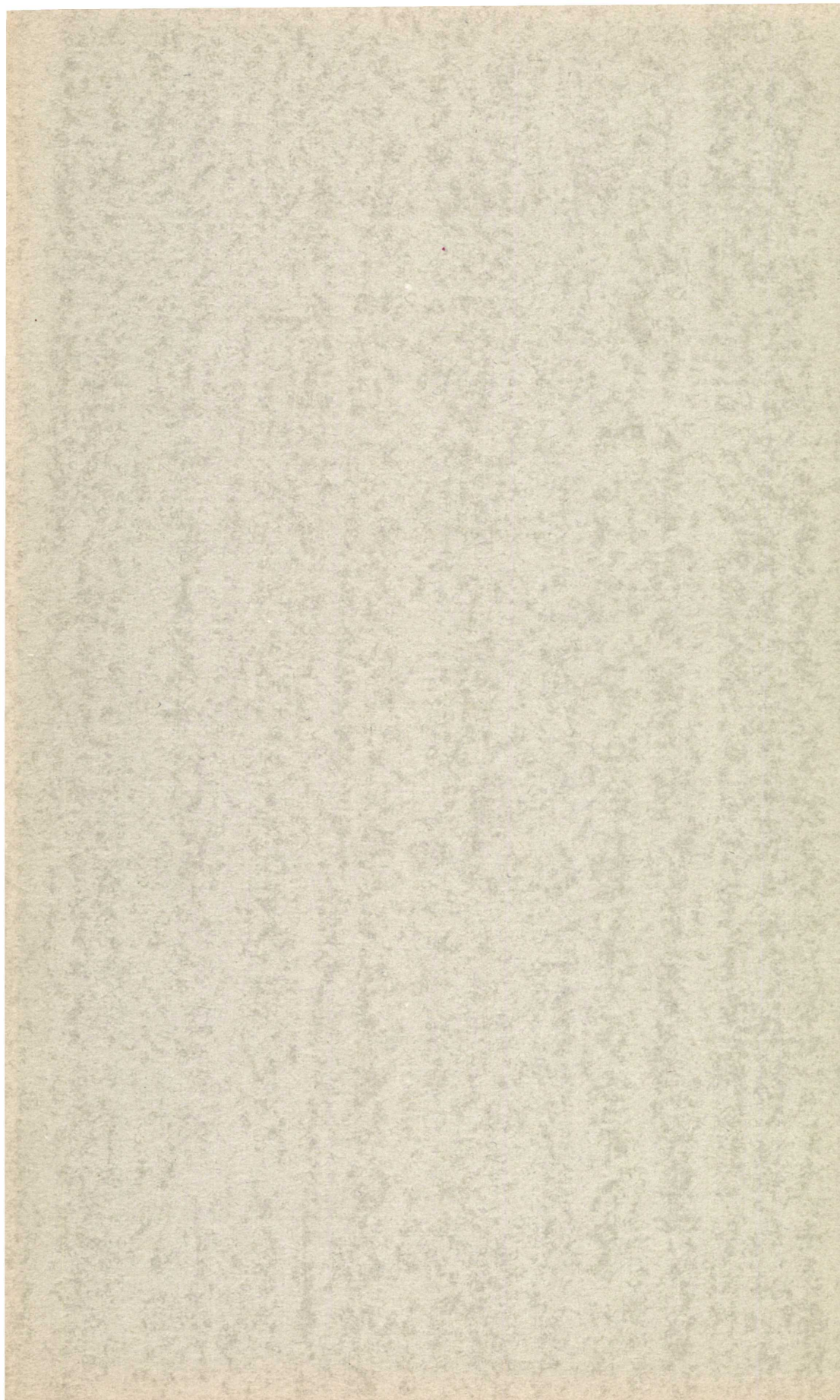
Balance Sheet as at 30th September, 1938.

LIABILITIES.				ASSETS.								
£	s.	d.	£	s.	d.	£	s.	d.				
F. Cooper, Ltd., Trust Fund			115	10	0	Post Office Savings Bank ..	365	4	2			
Sundry Creditors			24	1	0	Bank of New Zealand ..	46	9	11			
Subscriptions in Advance ..			5	17	3							
Endowment Fund			63	0	0	Government Stock at Cost			411	14	1	
Accumulated Fund as at						(Investment on ac-						
30/9/1937	293	4	2			count F. Cooper,			100	17	6	
Add excess of Income over						Ltd., Trust Fund)						
Expenditure	40	19	2			Office Furniture	34	10	0			
						Less Sold	2	10	0			
			334	3	4							
						Less Depreciation ..	32	0	0			
							2	0	0	30	0	0
			£542	11	7					£542	11	7

I have examined the books, papers, and vouchers of the Institute, and certify that in my opinion the above Balance-Sheet correctly shows the position, as at the 30th September, 1938, and the accompanying statements the transactions for the year 1937-38 in accordance with the information and explanations given to me and as shown by the books.

J. L. ARCUS, F.I.A.N.Z.,
Hon. Auditor.

Wellington, 12th January, 1939.



New Zealand Institute of Horticulture

(INCORPORATED).

Patrons: Their Excellencies VISCOUNT GALWAY, Governor-General and LADY GALWAY.

Vice-Patron: The Hon. the Minister of Agriculture.

President: F. S. POPE, Esq., Wellington.

Hon. Editor: Dr. H. H. ALLAN, Department of Scientific and Industrial Research, Wellington.

Dominion Secretary: G. S. NICOLL, P.O. Box 1237, Wellington.

Hon. Secretaries of Local District Councils:

Auckland: P. R. Parr, 7 Atarangi Road, Green Lane.

Canterbury: J. N. McLeod, 108 Papanui Street, Papanui, Chch.

Otago: Dennis H. Leigh.

Southland: B. P. Mansfield, Box 58, Invercargill.

Taranaki: L. W. Delph, M.A., Frankleigh Park, New Plymouth.

Membership:

Individuals: 12/6 per annum (including Member's wife).

Juniors under age eighteen: 2/6 per annum.

Societies, Firms, etc., 21/- per annum.

Journal (quarterly):

To Members: Free.

Examinations:

Examinations are held yearly in November.

Students desiring examination should make early application to

DOMINION SECRETARY,

N.Z. Institute of Horticulture,

P.O. Box 1237, Wellington.